

WHAT IS CLAIMED IS:

1 1. A portable computer system which includes a main body, a power supplying unit, and a
2 liquid crystal display (LCD) apparatus having an LCD panel which is operated by electric power
3 supplied by the power supplying unit and a back light which illuminates the LCD panel, said system
4 further comprising:

5 a direct current to alternating current (DC/AC) inverter for supplying AC power to the back
6 light;

7 a contrast sensing part for sensing contrast of a video signal displayed on the LCD panel and
8 outputting a pulse width modulation (PWM) signal;

9 a DC converter for converting the PWM signal from the contrast sensing part into a DC
10 signal;

11 a voltage controller provided between the DC converter and the DC/AC inverter for
12 providing the DC signal from the DC converter as an operating voltage of the DC/AC inverter; and

13 a controller connected in series with the DC/AC inverter for sensing the operating voltage
14 of the DC/AC inverter, and for controlling the voltage controller on the basis of the operating voltage
15 of the DC/AC inverter.

1 2. The portable computer system according to claim 1, wherein the controller is directly
2 connected to the DC/AC inverter, and the contrast sensing part is connected to the DC/AC inverter
3 via the DC converter and the voltage controller.

1 3. The portable computer system according to claim 1, further comprising a back light
2 manual selection part operable for suspending a back light automatic control function, and wherein
3 the controller turns off the voltage controller when the back light manual selection part is operated
4 to suspend the back light automatic control function.

1 4. The portable computer system according to claim 3, wherein the back light manual
2 selection part is included in a keyboard unit provided in the main body.

3 5. A method of controlling a portable computer system which includes a main body to which
4 a power supplying unit is connected, and an LCD apparatus having an LCD panel operated by
5 electric power supplied by the power supplying unit, a back light for illuminating the LCD panel,
6 and a contrast sensing part, said method comprising the steps of:

7 sensing an operating voltage of a DC/AC inverter supplying an AC voltage to the back light,
8 and

9 converting a back light control signal, outputted from the contrast sensing part, into a DC
10 signal, and controlling the DC signal to have an intensity for operating the DC/AC inverter so as to
11 supply a DC operating voltage to the DC/AC inverter.

1 6. The method according to claim 5, further comprising the steps of:

2 selecting a back light manual control function; and

3 suspending a back light automatic control function so as to allow a user to manually control
4 the back light when the back light manual control function is selected.

1 7. The method according to claim 6, further comprising the step, prior to the sensing step,
2 of determining whether the contrast sensing part is provided, and suspending the back light
3 automatic control function so as to allow the user to manually control the back light when the
4 contrast sensing part is not provided.

8. The method according to claim 7, wherein the back light automatic control function is
carried out based on sensing, by the contrast sensing part, of a contrast of a video signal, displayed
on the LCD panel.

9. The method according to claim 6, wherein the back light automatic control function is
carried out based on sensing, by the contrast sensing part, of a contrast of a video signal displayed
on the LCD panel.

1 10. The method according to claim 5, further comprising the step, prior to the sensing step,
2 of determining whether the contrast sensing part is provided, and suspending a back light automatic
3 control function so as to allow the user to manually control the back light when the contrast sensing
4 part is not provided.

11. The method according to claim 10, wherein the back light automatic control function is carried out based on sensing, by the contrast sensing part, of a contrast of a video signal displayed on the LCD panel.

12. The method according to claim 5, wherein the back light automatic control function is carried out based on sensing, by the contrast sensing part, of a contrast of a video signal displayed on the LCD panel.

13. A portable computer system having a liquid crystal display (LCD) and a back light illuminating the LCD panel, said system further comprising:

direct current to alternating current (DC/AC) inverter means for supplying AC power to the back light;

contrast sensing means for sensing a contrast of a video signal displayed on the LCD panel and outputting a pulse width modulation (PWM) signal;

DC converter means for converting the PWM signal outputted by the contrast sensing means into a DC signal; and

voltage controller means disposed between the DC converter means and the DC/AC inverter means for controlling the DC signal from the DC converter means so that it has an intensity of an operating voltage for the DC/AC inverter means, and for supplying the controlled DC signal to the DC/AC inverter means.

1 14. The portable computer system according to claim 13, further comprising controller
2 means connected to the DC/AC inverter means for sensing the operating voltage of the DC/AC
3 inverter means, and for controlling the voltage controller means on the basis of the sensed operating
4 voltage.

1 15. The portable computer system according to claim 14, wherein the controller means is
2 directly connected to the DC/AC inverter means, and the contrast sensing means is connected to the
3 DC/AC inverter means via the DC converter means and the voltage controller means.

1 16. The portable computer system according to claim 14, further comprising back light
2 selection means operable by a user for selecting manual control of the back light and for suspending
3 automatic control of the back light.

1 17. The portable computer system according to claim 16, wherein the back light selection
2 means comprises a keyboard unit of the portable computer system.

1 18. The portable computer system according to claim 16, wherein the controller means turns
2 off the voltage controller means when the user operates the back light selection means to select the
3 manual control of the back light.

1 19. The portable computer system according to claim 13, further comprising back light
2 selection means operable by a user for selecting manual control of the back light and for suspending
3 automatic control of the back light.

1 20. The portable computer system according to claim 19, wherein the back light selection
2 means comprises a keyboard unit of the portable computer system.